

Flamecoat Systems) was used to apply the blend. The  
 25 resulting coatings were postheated using the flame-spray  
 apparatus for four different lengths of time ranging from  
 zero to about ten seconds. The results are set out below in  
 Table 9.

TABLE 9

Run	Postheating time, seconds (approximate)	Color following postheating	Total Volume Loss, 2000 cycles, cm <sup>3</sup>
9-1	0	Clear	Fell apart < 30 cycles.
9-2	3	Clear	Fell apart < 20 cycles.
9-3	6	Beige	Fell apart < 1200 cycles.
9-4	10	Tan	0.27

Various modifications and alterations of this invention  
 will be apparent to those skilled in the art without departing

55 from the scope and spirit of this invention. It should be  
 understood that this invention is not limited to the illustra-  
 tive embodiments set forth above.

What is claimed is:

60 1. A method for marking a transportation surface com-  
 prising the steps of:

- a) heating the surface to a temperature above ambient  
 temperature;
- 65 b) melting or otherwise substantially softening a finely-  
 divided, free flowing, flame-sprayable, powder binder  
 material selected from the group consisting of acrylic

polymers and copolymers, olefin polymers and copolymers having a number average molecular weight greater than 10,000, urethane polymers and copolymers, curable epoxy resins, ester polymers and copolymers, and blends thereof; 5

c) applying the molten or softened binder to the surface together with a particulate topcoat or particulate filler selected from the group consisting of reflective elements, skid-resistant particles, magnetizable particles and mixtures thereof; and 10

d) allowing the thus-applied materials to cool and form a marker in which the binder adheres directly to the surface.

2. A method according to claim 1, wherein the applied materials are postheated after they are applied to the surface. 15

3. A method according to claim 1, wherein the binder is thermosettable.

4. A method according to claim 1, wherein the binder comprises a blend.

5. A method according to claim 4, wherein the blend comprises olefin polymer or copolymer and curable epoxy resin.

6. A method according to claim 4, wherein the blend  
5 comprises an acrylic polymer or copolymer and one or more of a urethane or ester polymer or copolymer.

7. A method according to claim 4, wherein the blend comprises acrylic polymer or copolymer and ethylene acrylic acid or ethylene methacrylic acid copolymer.

10 8. A method according to claim 1, wherein the marker comprises two or more layers, with at least the layer adjacent the transportation surface having such binder adhered directly to such surface.

15 9. A method according to claim 1, wherein the binder comprises an ethylene acrylic acid or ethylene methacrylic acid copolymer and the particulate filler or particulate top-coat comprise reflective elements and skid-resistant particles.

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10. A method for marking a transportation surface comprising the steps of:
- a) heating the surface to a temperature above ambient temperature;
  - b) flame spraying onto the surface a finely-divided, free flowing powder binder material comprising acrylic polymer or copolymer, olefin polymer or copolymer, urethane polymer or copolymer, curable epoxy resin, ester polymer or copolymer, or blend thereof and a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles or mixture thereof; and
  - c) allowing the thus-applied materials to cool and form a marker in which the binder adheres directly to the surface.
11. A method according to Claim 10, wherein the applied materials are postheated after they are applied to the surface.
12. A method according to Claim 10, wherein the binder is thermosettable.
13. A method according to Claim 10, wherein the binder comprises a dry powder blend.
14. A method according to Claim 13, wherein the blend comprises curable epoxy resin and olefin polymer or copolymer.
15. A method according to Claim 13, wherein the blend comprises acrylic polymer or copolymer and one or more of a urethane or ester polymer or copolymer.
16. A method according to Claim 13, wherein the blend comprises acrylic polymer or copolymer and ethylene acrylic acid or ethylene methacrylic acid copolymer
17. A method according to Claim 13, wherein the blend comprises a mixture of thermosettable and thermoplastic materials.

18. A method according to Claim 10, wherein the binder comprises an ethylene acrylic acid or ethylene methacrylic acid copolymer and the particulate filler or particulate topcoat comprise reflective elements and skid-resistant particles.

19. A method according to Claim 10, wherein the marker comprises two or more layers.

20. A kit comprising one or more containers comprising finely-divided, free flowing, flame-sprayable, powder binder material comprising acrylic polymer or copolymer, urethane polymer or copolymer, curable epoxy resin, ester polymer or copolymer, or blend thereof, together with a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles or mixture thereof.

21. A kit according to Claim 20, wherein the binder is thermosettable.

22. A kit according to Claim 20, wherein the binder comprises curable epoxy resin.

23. A kit according to Claim 20, wherein the binder comprises a dry powder blend.

24. A kit according to Claim 23, wherein the blend comprises curable epoxy resin and olefin polymer or copolymer.

25. A kit according to Claim 23, wherein the blend comprises acrylic polymer or copolymer and one or more of a urethane or ester polymer or copolymer.

26. A kit according to Claim 23, wherein the blend comprises acrylic polymer or copolymer and ethylene acrylic acid or ethylene methacrylic acid copolymer.

27. A kit according to Claim 23, wherein the blend comprises a mixture of thermosettable and thermoplastic materials.

28. A kit according to Claim 20, wherein the binder has a melt index greater than about 200.

29. A kit according to Claim 28, wherein the melt index is greater than about 500.

30. A kit according to Claim 20, wherein the kit components comprise two containers, one comprising binder and the other comprising reflective elements or skid-resistant particles.

31. A kit according to Claim 20, wherein the kit components are a substantially uniform powder mixture in a single container.

32. A kit according to Claim 20, comprising reflective elements and skid-resistant particles, and further comprising pigment and an extending or reinforcing filler comprising calcium carbonate, alumina having a particle diameter less than 150  $\mu\text{m}$ , wollastonite, glass fibers, or substantially glassy particles.

33. Transportation surface marker comprising:

- a) a binder comprising a blend of:
  - i) curable epoxy resin and olefin polymer or copolymer,
  - ii) acrylic polymer or copolymer and one or more of a urethane or ester polymer or copolymer,
  - iii) acrylic polymer or copolymer and olefin polymer or copolymer,  
with
- b) a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles, or mixture thereof,

wherein the binder adheres directly to the transportation surface.

34. A transportation surface marker according to Claim 33, wherein the binder is thermoset.

35. A transportation surface marker according to Claim 33, wherein the marker is about 0.13 to about 2 mm thick and has a generally planar upper surface.

36. A transportation surface marker according to Claim 33, wherein the topcoat has a reflective element coating weight of about 0.04 to about 0.17 kg/m<sup>2</sup>.

37. A transportation surface marker according to Claim 33, wherein the marker comprises skid-resistant particles having a particle diameter between about 300 and about 1500  $\mu\text{m}$ , and the marker has surface frictional properties of at least about 45 British Pendulum Number.

38. A transportation surface marker according to Claim 33, wherein the marker is adjacent to a transportation surface and contains two or more layers, with at least the layer adjacent the transportation surface containing binder adhered directly to such surface.

39. A transportation surface marker according to Claim 38, wherein the layers have different colors and part of the layer that is adjacent the transportation surface is visible.

40. Transportation surface marker comprising a binder comprising a blend of thermosettable and thermoplastic materials, and a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles, or mixture thereof, wherein the binder adheres directly to the transportation surface.

41. A transportation surface marker according to Claim 40, wherein the marker is about 0.13 to about 2 mm thick and has a generally planar upper surface.

42. A transportation surface marker according to Claim 40, wherein the topcoat has a reflective element coating weight of about 0.04 to about 0.17 kg/m<sup>2</sup>.

43. A transportation surface marker according to Claim 40, wherein the marker comprises skid-resistant particles having a particle diameter between about 300 and about 1500  $\mu\text{m}$ , and the marker has surface frictional properties of at least about 45 British Pendulum Number.

44. A transportation surface marker according to Claim 40, wherein the marker is adjacent to a transportation surface and contains two or more layers, with at least the layer adjacent the transportation surface containing binder adhered directly to such surface.

45. A transportation surface marker according to Claim 44, wherein the layers have different colors and part of the layer that is adjacent the transportation surface is visible.